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PCT/KR2003/002789

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Artcle 36 and Rule 70)

Applicant's or agent's file reference OPP031339KR	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. **PCT/KR2003/002789**	International filing date *(day/month/year)* **19 DECEMBER 2003 (19.12.2003)**	Priority date *(day/month/year)* 21 DECEMBER 2002 (21.12.2002)

International Patent Classification (IPC) or national classification and IPC

IPC7 C22B 1/14

Applicant

POSCO et al

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 3 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demamd	Date of completion of this report
21 JULY 2004 (21.07.2004)	22 FEBRUARY 2005 (22.02.2005)

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International aplication No.
PCT/KR2003/002789

I. Basis of the report

1. With regard to the elements of the international application:*

☒ the international application as originally filed

☐ the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____, filed with the letter of _____

☐ the claims:
pages _____ , as originally filed
pages _____ , as amended (together with any statment) under Article 19
pages _____ , filed with the demand
pages _____, filed with the letter of _____

☐ the drawings:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____, filed with the letter of _____

☐ the sequence listing part of the description:
pages _____ , as originally filed
pages _____ , filed with the demand
pages _____, filed with the letter of _____

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.
These elements were available or furnished to this Authority in the following language English which is

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).

☒ the language of publication of the international application(under Rule 48.3(b)).

☐ the language of the translation furnished for the purposes of international preliminary examination(under Rules 55.2 and/or 55.3).

3. With regard to any **nucleotide** and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained inthe international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form

☐ The statement that the subsequently furnished written sequence listing does not go beyond the disc losure in the international applicationas as filed has been furinshed.

☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages _____

☐ the claims, Nos. _____

☐ the drawings, sheets _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box(Rule 70.2(c)).**

* *Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this opinion as "originally filed." and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).*

** *Any replacement sheet containing such amendments must be referred to under item I and annexed to this report.*

INTERNATIONAL PRELIMINARY EXAMINATION

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V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1-30	YES
	Claims	NONE	NO
Inventive step (IS)	Claims	1-30	YES
	Claims	NONE	NO
Industrial applicability (IA)	Claims	1-30	YES
	Claims	NONE	NO

2. Citations and explanations (Rule 70.7)

Reference is made to the following document:

D1: US 4076520 (MIDREX CORPORATION) 28 February 1978

The present invention relates to an apparatus for manufacturing molten irons by hot-compacting fine direct reduced irons and calcined additives and a method using the same, comprising the steps of: producing reducing material out of a mixture of fine direct reduced irons and calcined additives; and through at least one pair of roller presses, producing compacted material which is formed such that acute and obtuse angles are formed between a center line formed along a length of a cross section that is cut along a lengthwise direction perpendicular to an axial direction of the roller presses and connecting lines that connect grooves closest to each other across the cross sectional area.

D1 relates to a method for continuous passivation of sponge iron material, comprising the steps of feeding the sponge iron material to one pair of presses, forming the material into an elongated and groovy shape, and cutting the material.

The following are comparisons between the present invention and the cited invention of D1: both inventions are the same in providing an apparatus and a method for continuously hot-compacting the reduced iron. However, the present invention is different from the cited invention in that the present invention prevents the crack and breakage of a compact during continuous production by forming the cross sectional area of the compact into acute and obtuse circumferential planes in turn, whereas D1 poses problems of breakage caused by the formation of a crack in a compact during the formation into a groovy shape, and of low permeability during the feeding to a melting gas furnace.

Therefore, the claimed invention is considered to be novel, to involve an inventive step, and to be industrially applicable.